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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/814,579
Filing Date: March 31, 2004
Appellant(s): DRORY ET AL.

W. Allen Powell

For Appellant

EXAMINER'S ANSWER

This is in response to the Appeal Brief filed October 09, 2007, appealing from the Office action mailed May 11, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

NEW GROUND(S) OF REJECTION

A new grounds of rejection has been presented for claims 1-11 and 21-23 under 35 USC § 101 for non-statutory subject matter.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,920,446	Wang	03-2002
6,684,219	Shaw	11-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-11 and 21-23 are directed to non-statutory subject matter. In particular, claims 1-11 recite a system for performing query operations with various tables, such as a base table and an index table, along with a module, which has no tangible properties

in the claims or in the description. Also, claims 21-23 recite a computer-readable medium with instructions and code for performing certain actions, wherein the medium has not been defined within the specification and the examiner is unsure of its structure. However, the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US Patent No. 6,920,446) filed March 21, 2002, in view of Shaw (US Patent No. 6,684,219) filed November 24, 1999.**

Regarding Claims 1,11-13,16, and 21-22, Wang discloses a system for performing query operations, the system comprising:

a base table having a plurality of spatial objects (column 4, lines 37-43, Wang). However, Wang is silent with respect to an index table that comprises a plurality of data entries, the plurality of data entries being associated with the plurality of spatial objects. On the other hand, Shaw discloses an index table that comprises a plurality of data entries, the plurality of data entries being associated with the plurality of spatial objects (column 10, lines 16-43, Shaw). Wang and Shaw are analogous art because they are from the same field of endeavor of providing a representation of spatial objects. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Shaw's

teachings into the Wang system. A skilled artisan would have been motivated to combine as suggested by Shaw at column 5, lines 33-48, in order to permit easy and complete updating of data, more complex queries, and direct exporting of data into the relational tables. Therefore, the combination of Wang in view of Shaw, disclose a module adapted to perform a query operation on the index table (column 14, lines 8-24, Shaw), the module configured to; convert a query window into a plurality of values (column 14, lines 24-56, Shaw); create a scan range for each of the plurality of values with a begin range value and an end range value from the plurality of values (column 7, lines 50-64, Wang), wherein the scan range includes a stop condition (column 4, lines 22-30, Wang); scan the plurality of data entries for each of the scan ranges to identify one of the end range value and the stop condition (column 8, lines 30-45, Wang); and return a result based upon the plurality of data entries that are within the scan range for each of the plurality of values (column 8, Table 5, Wang).

Regarding Claim 2, the combination of Wang in view of Shaw, disclose the system wherein the stop condition is satisfied if one of the plurality of data entries is not Z-value equivalent to one of the plurality of values being utilized to scan the plurality of data entries (column 1, lines 44-46, Wang).

Regarding Claims 3 and 14, the combination of Wang in view of Shaw, disclose the system wherein the index table is a Polygon Map Region QuadTree index (column 13, lines 32-46, Shaw).

Regarding Claims 4 and 23, the combination of Wang in view of Shaw, disclose the system wherein the plurality of data entries each comprises a Z-value field and an object identification field (column 4, lines 46-55 and column 6, Table 3, Wang).

Regarding Claim 5, the combination of Wang in view of Shaw, disclose the system wherein the result comprises a plurality of object identification fields that correspond to a plurality of data entries (column 4, lines 41-50, Wang).

Regarding Claims 6,17, and 20, the combination of Wang in view of Shaw, disclose a system for performing query operations, the system comprising:

a base table having a plurality of spatial objects (column 4, lines 37-43, Wang);

an index table that comprises a plurality of data entries, the plurality of data entries being associated with the plurality of spatial objects in the base table (column 10, lines 16-43, Shaw);

a module adapted to perform a query operation on the index table (column 14, lines 8-24, Shaw), the module configured to;

convert a query window into a plurality of values (column 14, lines 24-56, Shaw);

perform a first scan for one of the plurality of values on the plurality of data entries (column 5, lines 27-41, Wang);

return a result from the first scan of the plurality of data entries (column 5, lines 54-57 and Table 1, Wang);

determine whether a second of the plurality of values may return the result with a second scan (column 6, lines 30-36, Wang);

skip the second scan if the second scan is determined to return the result (column 7, lines 58-64, Wang); and

perform the second scan if the second scan is determined not to return the result (column 6, lines 15-24, Wang).

Regarding Claim 7, the combination of Wang in view of Shaw, disclose the system wherein the plurality of values comprises a plurality of Z-values and the plurality of data entries comprise a plurality of fields, wherein one of the plurality of fields is a Z-value field (column 4, lines 46-55 and column 6, Table 3, Wang).

Regarding Claim 8, the combination of Wang in view of Shaw, disclose the system wherein the results comprise an empty identifier or a table having a plurality of Z-values and a plurality of object identifications (column 4, lines 46-55 and column 6, Table 3, Wang).

Regarding Claim 9, the combination of Wang in view of Shaw, disclose the system comprising creating a scan range for each of the plurality of values with a begin range value and an end range value from the plurality of values (column 7, lines 50-64, Wang), wherein the scan range includes a stop condition (column 4, lines 22-30, Wang);

Regarding Claim 10, the combination of Wang in view of Shaw, disclose the system wherein the begin range value is higher than the end range value; and the module is configured to perform the first scan on the plurality of data entries in descending order (columns 3-4, lines 63-67 and 1-2, respectively, Wang).

Regarding Claim 15, the combination of Wang in view of Shaw, disclose the method wherein scanning comprises comparing each of the plurality of data entries to at least one of the plurality of values to determine if each of the plurality of data entries is Z-value equivalent to the at least one of the plurality of values (column 8, lines 15-30, Wang).

Regarding Claim 18, the combination of Wang in view of Shaw, disclose the method wherein the result may be one of an empty identifier or a table that

comprises a Z-value field and an object identification field (column 4, lines 46-55 and column 6, Table 3, Wang).

Regarding Claim 19, the combination of Wang in view of Shaw, disclose the method comprising combining each of the results into a result table to be provided to a user in response to the query operation (column 7, lines 23-35, Wang).

(10) Response to Argument

Appellant argues Shaw fails to disclose a module configured to “convert a query window into a plurality of values”.

Examiner respectfully disagrees. Shaw discloses at column 14, lines 21-56, wherein *“the query process of the present invention begins with the user accessing the system, typically through a terminal or graphical user interface (not shown) and electing a query transaction. The system responds at step 90 by opening the map interface to the database...The user specifies at step 91 a geographic area of coverage, either by coordinate points, longitude/latitude coordinates, or a place name optionally selected from a table of place names. The system responds at step 92 by accessing the object-oriented databases, searching for a match between the database of spatial objects and the requested area of interest...At step 93, the system lists to the user all databases whose geographic coverage includes at least part of the area of interest, regardless of whether the databases are VPF, RPF, or TPS. The user selects the database of choice at step 94. The system responds at steps 95 and 96 by listing all libraries within the database whose objects at least intersect the geographic area of interest. At step 97, the user selects a library of choice, in response to which the system lists to the user at step 98 all*

coverage's and features covered by the selected library. Exemplary coverage's include population, obstruction, hydrography, earth cover, transportation, and navigation. The user then selects at step 99 a coverage or feature(s) desired. It is important to note that the actual objects are delivered to the user, not just a map or overlay of the qualifying area". Examiner interprets the query process beginning by the user accessing the graphical user interface to correspond to the query window and electing a query transaction and opening the map interface to the database to correspond to the converting of the query window. Further, examiner interprets the coordinate points, longitude/latitude coordinates as well as the listing of all of the databases of choice, the listing of all the libraries within the database, and then the listing of all coverages (i.e., population, obstruction, hydrography, etc.) to correspond to the plurality of values that the query window has been converted into. The appellant's own disclosure cites "a window operator may transform the query window into index identifiers based on the index operator, which may be Z-values that are discussed below" (see paragraph [0020]), thus detailing that the conversion of the query window is converted into index identifiers and based on Z-values (wherein Z-values are values of a surface at a particular x, y location). Shaw discusses spatial indexing of data, which is indexing of spatial data (i.e. spatial data being data that defines a location such as geographical data, or x-coordinates and y-coordinates, or longitude/latitude coordinates), which therefore corresponds to the Z-values. As a result, the argued limitation above has been fully disclosed.

Appellant argues, the cited references do not disclose a module configured to "create a scan range for each of a plurality of values converted from the query

window with a *begin range* value and an *end range* value, wherein the scan range includes a stop condition"

Examiner respectfully disagrees. To begin, while the appellants do not give a definitive definition of a scan range, as understood by the description at paragraph [0030], the operator may provide a scan range for each of the plurality of Z-values. Therefore, a scan range is merely a range of values which correlate to the Z-values given. As such, Wang disclose at column 7, lines 50-64, wherein Table 4 shows the column headings 'Block Start' and 'Block End' with interval ranges under each column. Also, the citation states, "*In Table 4, the merged level-6 z-regions are in a block at z-level 4 that starts at [2,2] and ends at [3,3]*". Examiner interprets the 'Block Start' as the begin range value and 'Block End' as the end range value. Further explanation with reference to the intervals and range values can be found at column 5, lines 27-37. Next, Wang discloses at column 4, lines 22-30, wherein "*The z-regions are iteratively split until a termination criterion is met*". Examiner interprets the termination criterion to correspond to the stop condition. As a result, the argued limitation above has been fully disclosed.

Appellant argues Wang lacks any teaching relating to the claimed subject matter of skipping a second scan, if the second scan is determined to return the result.

Examiner respectfully disagrees. To begin, the term "if" is a relative term which is considered alternative language. Next, Wang discloses at column 7, lines 58-64, wherein "*the merged level-6 z-regions are in a block at z-level 4 that starts at [2,2] and ends at [3,3]*".

The z-code associated with this block is 0011. The remaining z-regions are still at level 6 since they have not been merged at 116. The merge at 116 is repeated until there are no further neighboring z-regions (at any z-level) with z codes that differ only by the least significant bit". Examiner interprets the repetition of the merge as representing the return of the result not determined, which thereby corresponds to the skipping the second scan if the second scan is determined to return the result. As a result, the argued limitation above has been fully disclosed.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above.

Accordingly, appellant must within TWO MONTHS from the date of this answer exercise one of the following two options to avoid sua sponte dismissal of the appeal as to the claims subject to the new ground of rejection:

(1) Reopen prosecution. Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be

entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) Maintain appeal. Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

An Appeal Conference was held on July 28, 2008 with conferees:
Chelcie Daye (Patent Examiner), Apu Mofiz (SPE), and Eddie Lee (SPE).

Respectfully submitted,
CLD
August 12, 2008

Art Unit: 2161

Conferees:

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